

**LESSON
MASTER****10-5
A****Questions on SPUR Objectives**
See pages 661-663 for objectives.**Skills** Objective C

In 1-7, multiply and simplify.

1. $(n + 8)(n + 2)$

2. $(x - 6)(x + 8)$

3. $(y - 3)(y - 9)$

4. $(4a + 5)(4a - 5)$

5. $(a - b)(a + 5b)$

6. $(n^2 + 2n)(n + 5)$

7. $(3 + \sqrt{5})(10 - \sqrt{5})$

In 8 and 9, fill in the blanks.

8. $(n + 2)(n - \underline{\hspace{1cm}}) = n^2 - 5n - 14$

9. $(x + \underline{\hspace{1cm}})(x + 6) = x^2 + 7x + 6$

Representations Objective I

In 10 and 11, two binomials are given. a. Simplify the product.

b. Draw a diagram to represent the multiplication.

10. $(x + 5)(x + 4)$

a. _____

b. _____

11. $(2x + 3)(2x + 1)$

a. _____

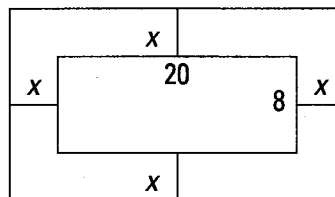
b. _____

12. A fountain is in the shape of a rectangle 20 ft long and 8 ft wide. A sidewalk x feet wide surrounds the fountain.

a. What is the length of the outer rectangle? _____

b. What is the width of the outer rectangle? _____

c. Write an expression for the combined area of the fountain and the sidewalk. _____



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In 8–10, use this information: Amy and Anton have just graduated and are each saving money for a down payment on a house. They will each deposit their savings into a special account earning 5.5% interest compounded annually. Their plans are described below.

Amy: Wait and deposit \$5,000 at the beginning of the 6th, 7th, and 8th years.

Anton: Deposit \$4,000 at the beginning of the 1st, 2nd, and 3rd years.

8. Complete the spreadsheet below.

	A	B	C	D	E
1	Year	Amy's Deposit	Amy's End of Year Balance	Anton's Deposit	Anton's End of Year Balance
2	1	0	0	4,000	4,220
3	2	0	0	4,000	8,672.10
4	3	0	0	4,000	13,369.07
5	4	0	0	0	14,104.36
6	5	0	0	0	14,880.10
7	6	5,000	5,275	0	15,698.51
8	7	5,000	10,840.13	0	16,561.93
9	8	5,000	16,711.34	0	17,472.83

9. What formula could be used to calculate the value in

a. cell C9? **Samples: =1.055*(C8+B9)**

B7*(1.055^3+1.055^2+1.055)

b. cell E9? **Samples: =1.055*E8**

D2*(1.055^8+1.055^7+1.055^6)

10. Who has more money at the end of 8 years? How much more?

Anton; \$761.49

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LESSON MASTER

10-3
A

Questions on SPUR Objectives
See pages 661-663 for objectives.

Skills Objective C

In 1–10, simplify the expression.

1. $3(x + 5)$

$3x + 15$

2. $2y(3y^2 + 10y - 6)$

$6y^3 + 20y^2 - 12y$

3. $4x(2x)$

$8x^2$

4. $4x(2 + x)$

$4x^2 + 8x$

5. $-4ab(a^2 - 6ab + 9)$

$-4a^3b + 24a^2b^2 - 36ab$

6. $2m^4(m^3 - 3)$

$2m^9 - 6m^4$

7. $8(x + 9) + x$

$9x + 72$

8. $3(x^2 + 4x) + x(x - 15)$

$4x^2 - 3x$

9. $n(2n + 9) - 6(n - 1)$

$2n^2 + 3n + 6$

10. $x(2a + 1) + 6a(-x + 9)$

$-4ax + x + 54a$

In 11–14, fill in the blank.

11. $2(x + \underline{9}) = 2x + 18$

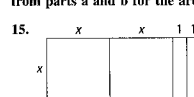
12. $6n(\underline{4n} + 9) = 24n^2 + 54n$

13. $x^2(x^2 + \underline{y}) = x^4 + x^2y$

14. $\underline{-3}(2y + 7) = -6y - 21$

Representations Objective I

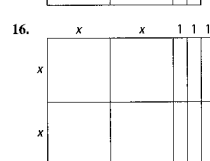
In 15–16, a rectangle is shown. a. Express the area as length \cdot width. b. Express the area as the sum of smaller areas. c. Write an equation using the expressions from parts a and b for the area of the rectangle.



a. **$(2x + 2)x$**

b. **$2x^2 + 2x$**

c. **$(2x + 2)x = 2x^2 + 2x$**



a. **$(2x + 3)2x$**

b. **$4x^2 + 6x$**

c. **$(2x + 3)2x = 4x^2 + 6x$**

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LESSON MASTER

10-4
A

Questions on SPUR Objectives
See pages 661-663 for objectives.

Skills Objective B

In 1–5, multiply and simplify.

1. $(n + 3)(n^2 + 5n + 9)$

$n^3 + 8n^2 + 24n + 27$

2. $(y - 2)(5y^2 + y - 4)$

$5y^3 - 9y^2 - 6y + 8$

3. $(x^2 + 2x + 3)(4x^2 - 8x + 1)$

$4x^4 - 3x^2 - 22x + 3$

4. $(5m + x - 1)(m - 6x - 8)$

$5m^2 - 6x^2 - 29mx - 41m - 2x + 8$

5. $(x + 8)(x + 3)(x - 2)$

$x^3 + 9x^2 + 2x - 48$

Representations Objective I

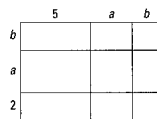
6. a. Express the area of the large rectangle as length \cdot width.

$(5 + a + b)(b + a + 2)$

b. Express this area as the sum of nine smaller areas.

$a^2 + b^2 + ab + ab +$

$2a + 5a + 2b + 5b + 10$



7. A cube has edges 5 cm long. A larger cube had edges a cm longer.

a. What is the volume of the first cube?

125 cm^3

b. What is the volume of the larger cube?

$(x^3 + 15x^2 + 75x)$

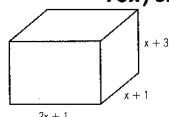
c. How much greater is the volume of the larger cube than the volume of the smaller one?

$(x^3 + 15x^2 + 75x) \text{ cm}^3$

8. a. Write an expression for the volume of the box at the right.

$2x^3 + 9x^2 + 10x + 3$

b. Check your answer to Part a by substituting 6 for x .



Dimensions are 13, 7, and 9, with volume

$819; 2(6^3) + 9(6^2) + 10(6) + 3 = 819$

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10-5
A

Questions on SPUR Objectives
See pages 661-663 for objectives.

Skills Objective C

In 1–7, multiply and simplify.

1. $(n + 8)(n + 2)$

$n^2 + 10n + 16$

2. $(x - 6)(x + 8)$

$x^2 + 2x - 48$

3. $(y - 3)(y - 9)$

$y^2 - 12y + 27$

4. $(4a + 5)(4a - 5)$

$16a^2 - 25$

5. $(a - b)(a + 5b)$

$a^2 + 4ab - 5b^2$

6. $(n^2 + 2n)(n + 5)$

$n^3 + 7n^2 + 10n$

7. $(3 + \sqrt{5})(10 - \sqrt{5})$

$25 + 7\sqrt{5}$

In 8 and 9, fill in the blanks.

8. $(n + 2)(n - \underline{7}) = n^2 - 5n - 14$

9. $(x + \underline{1})(x + 6) = x^2 + 7x + 6$

Representations Objective I

In 10 and 11, two binomials are given. a. Simplify the product.

b. Draw a diagram to represent the multiplication.

10. $(x + 5)(x + 4)$

a. **$x^2 + 9x + 20$**

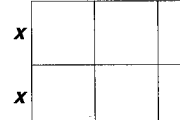
b. **$x^2 + 5$**



11. $(2x + 3)(2x + 1)$

a. **$4x^2 + 8x + 3$**

b. **$x^2 + x + 3$**



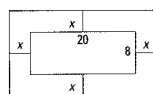
12. A fountain is in the shape of a rectangle 20 ft long and 8 ft wide. A sidewalk x feet wide surrounds the fountain.

a. What is the length of the outer rectangle? **$(2x + 20)$ ft**

b. What is the width of the outer rectangle? **$(2x + 8)$ ft**

c. Write an expression for the combined area of the fountain and the sidewalk.

$(4x^2 + 56x + 160) \text{ ft}^2$



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